

# ESSC

(Enterprise Systems Services Center)

## Project

### Status and Plans

Mike Boyer  
ITSD Infrastructure Projects Team

ESSC Stakeholders Committee

January 28, 2008



# Topics

- Review of the ESSC project scope/intent
- Progress to date
- Design concepts
- Site selection status
- Schedule



## ESSC Stakeholders Committee Meeting

1PM – 3PM January 28, 2008

Mitchell Building Conference Room 160



### AGENDA

1:00	1:10	Introductions & Opening Remarks	Dick Clark, State CIO
1:10	1:30	A&E Perspective on the ESSC Project	Joe Triem, A&E Division
1:30	2:00	Brief Overview of ESSC Project & Site Selection Status <ul style="list-style-type: none"><li>- Helena site</li><li>- Eastern Montana site</li></ul>	Mike Boyer, Project Director
2:00	2:10	<b><u>BREAK</u></b>	
2:10	2:30	Discussion: Implementation Approach	
2:30	2:40	Issue List/Risk Register	
2:40		Open Discussion	

# ESSC Business Objectives

- Security
  - Safeguard the IT assets of the State against physical threats and cyber threats
- Continuity of government
  - Assure continuous processing of critical systems
- Improved services
  - Manage availability to meet customer requirements
- Efficiency of services
  - Make high quality IT operations available to all State organizations

# ESSC Proposal

- Proposal in a nutshell:
  - Build two ESSCs
    - Helena site – replace Mitchell Bldg data/network center
      - 12,000-15,000 sf
    - “Eastern MT” site – peer site for critical workload; in a different seismic risk zone
      - 5,000-6,000 sf
  - “2N” capacity/redundancy for critical workload
  - “Non stop” processing for critical workload
    - Critical data mirrored between sites
    - Automated failover during an incident
  - Non-critical workload handled in Helena ESSC
  - Operations Center in Helena, minimal staff in East site
  - Both sites to have Tier III characteristics
    - Together they approach Tier IV

Premium Service

Standard Service

# ESSC Key Features

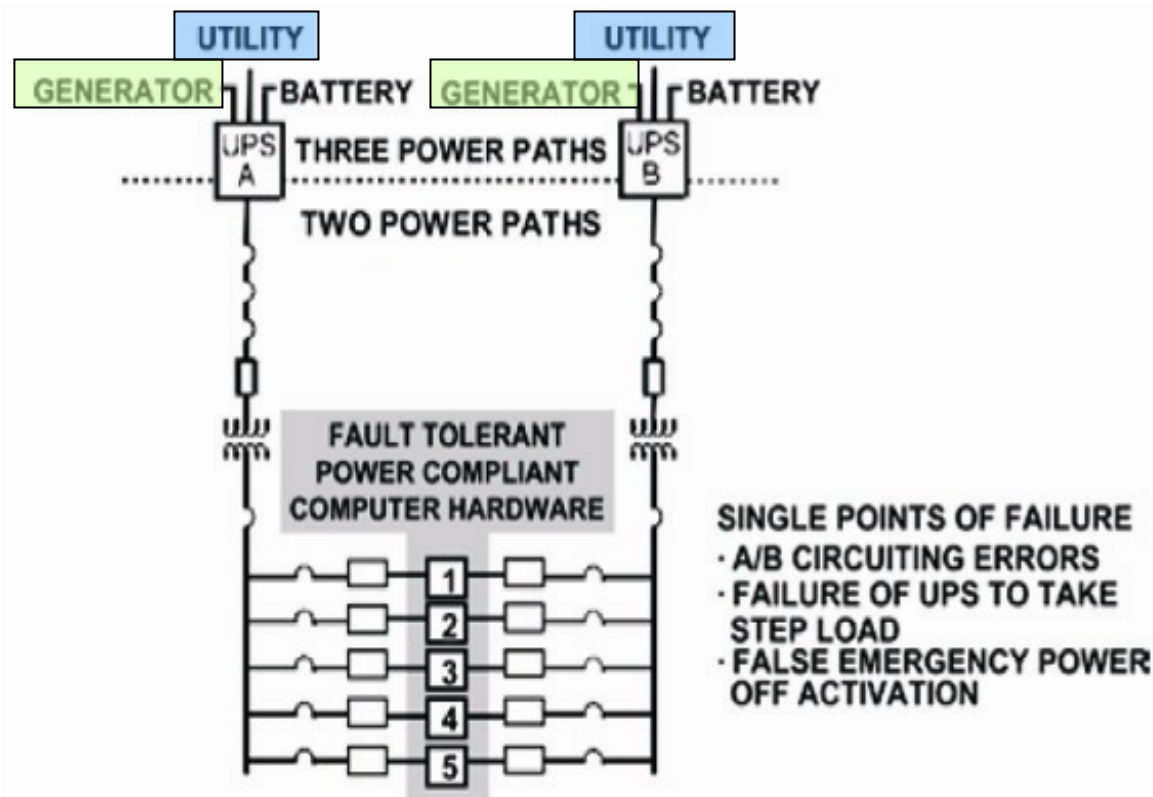
- Physical security
  - Topographical/external access obstacles
  - Building designed to control access
  - Limited staff access
  - Multi-factor authentication
- Redundant infrastructure
  - Power from “source to server”
  - Cooling
- Energy efficiency/environment friendly

# ESSC Design Objectives/Principles

- Modular design for ease/low cost of expansion
  - For both the building envelope and raised floor
- LEED “Green” characteristics
  - “Leadership in Energy and Environmental Design”
  - Low impact building (air, water, energy, pollution)
  - Power best practices to reduce demand
  - Cooling efficiency
    - Heat recovery
    - Ambient air use
- Uptime Institute Tier III/IV availability characteristics
  - Tier III “Concurrently maintainable site infrastructure”; multiple power & cooling paths, one active, down <1.6 hours/year
  - Tier IV “Fault tolerant site infrastructure”; multiple active power & cooling paths, redundant components, down <0.4 hours/year
  - Probability of two Tier III sites both being down: **0.000004%**

# An Example – “No” Single Point of Failure

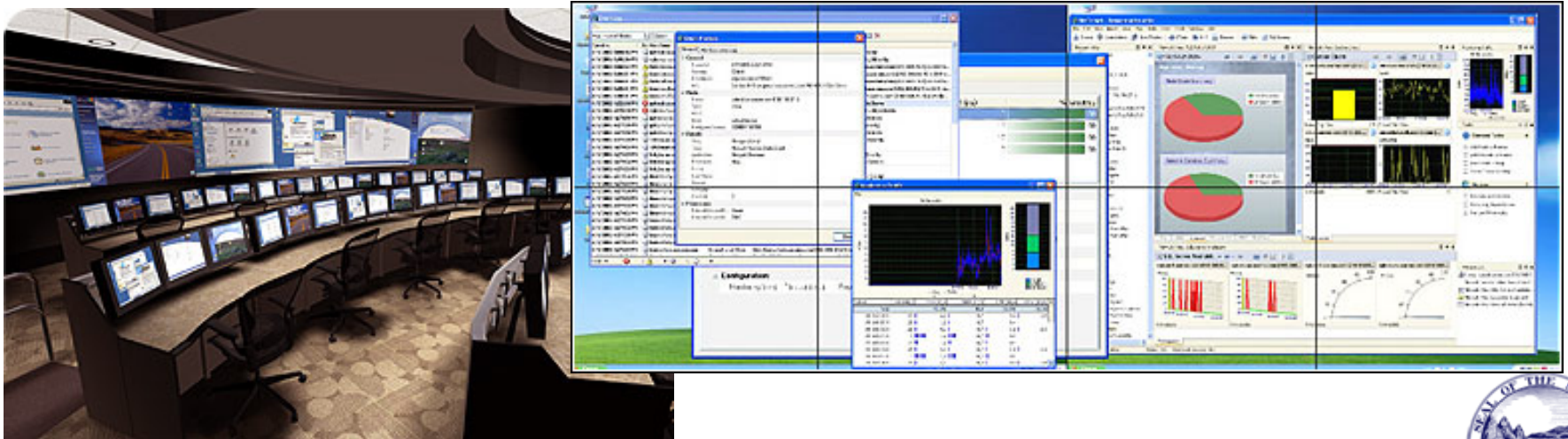
Dual Power Path: Typical of Tier III and Tier IV Site Infrastructure Designs, Requires that computer hardware (indicated by numbered boxes) be Fault-tolerant Power Compliant.





# Misc. Items of Interest

- Biometric security – reduced access
- 24-36" Raised floor
- 500-800 watts/sf power
- Operations Center – critical to Service Management
  - Integrate monitoring/incident mgmt/problem mgmt/change mgmt



# ESSC Design Activities

- Architecture & Engineering consultants
  - Design teams solicited in July – 14 proposals
  - Short list of 5 interviewed in September
  - Selection made and contract completed in October

*A&E Architects (lead), GPD, Robert Peccia & Assoc, Total Site Solutions (over 2,500 data center projects)*

- Design kick-off held December 3-4
- Additional sessions involved agency representatives

*Noteworthy: several agencies interested in Eastern MT ESSC for D/R support*

# Relocating ITSD Data Center

- Large, complex project that parallels the construction effort
- “Stage 1” planning process underway using TSS relocation specialists
- Early approach was to occupy Eastern site first
  - Smaller, easier to stabilize
  - Allow us to freeze Helena
- Current approach is to move to Helena ESSC first
  - Local rather than distant
  - Uses equipment budget better
  - Allows us to phase in real-time mirroring/failover with east site

# ESSC Major Activities & Current Targets

- Requirements definition and conceptual design: Feb '08
  - Detail design & construction documents/bid
    - Eastern site: May '08 ★
    - Helena site: July '08
  - Contract/break ground
    - Eastern site: July '08 ★
    - Helena site: September '08
  - Construction time estimate
    - Eastern site: 9-12 months
    - Helena site: 12-16 months
- (★ may be affected by site selection process)

# Site Selection

- Helena site
  - Focus on MDT property east of I-15
  - Two site options under consideration
  - Coordination discussions with MDT management
  - City of Helena requirement being researched
    - Connecting streets, utilities, etc.
    - Engineering schematics expected Feb. 1st
- Eastern Montana site
  - More complicated than anticipated
  - No established process for selection of a site

# Three Eastern Site Candidates

- Miles City
  - Pine Hills property
  - “No cost”
- Billings
  - West end “TransTech Center” or adjacent
  - Purchase required
  - Billings Heights site not viable
- Forsyth
  - Part of former Air Force site now owned by the city
  - Deed restrictions complicate

# Site Assessment Categories

- Property characteristics (general)
- Security/disaster risk characteristics
- Infrastructure available (power & fiber)
- Economic development potential
- Differences in one-time cost (HB4 funded)
  - Land acquisition and fiber installation costs
- Differences in ongoing cost (not funded)
  - Recurring telecommunications costs

# Draft Site Assessment Reviewed at Community Meetings

POINTS SUMMARY	Maximum Possible Points	Miles City	Billings - TransTech	Billings - Heights	Forsyth
Real Property	10,000	7,982	9,018	7,018	7,140
Security	10,000	6,881	5,821	4,627	6,284
Infrastructure	10,000	8,400	9,543	5,821	8,029
Economic Development	10,000	3,667	333	333	3,333
Capital Cost Comparison	20,000	20,000	0	20,000	0
Recurring Cost Comparison	40,000	10,000	40,000	40,000	0
<b>TOTAL</b>	<b>100,000</b>	<b>56,930</b>	<b>64,715</b>	<b>77,806</b>	<b>24,786</b>
Based on 100,000 possible points.					

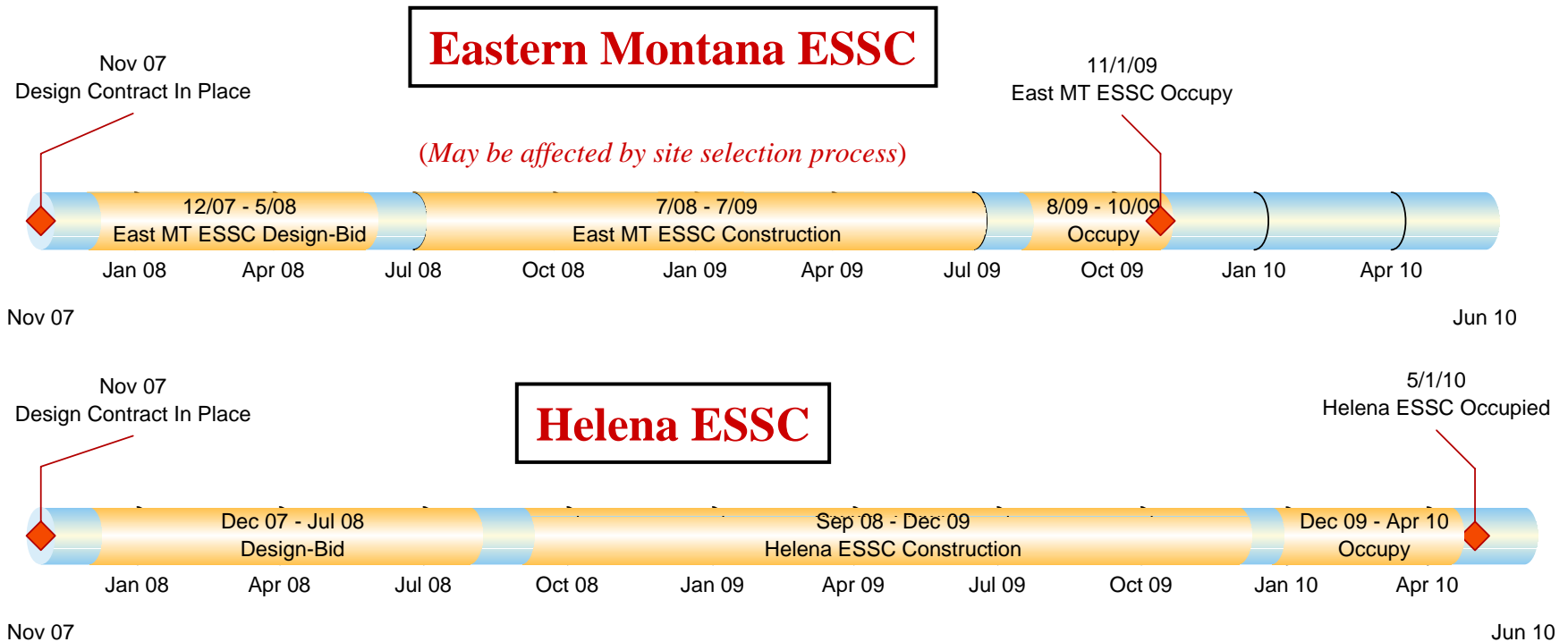




# Selection Process

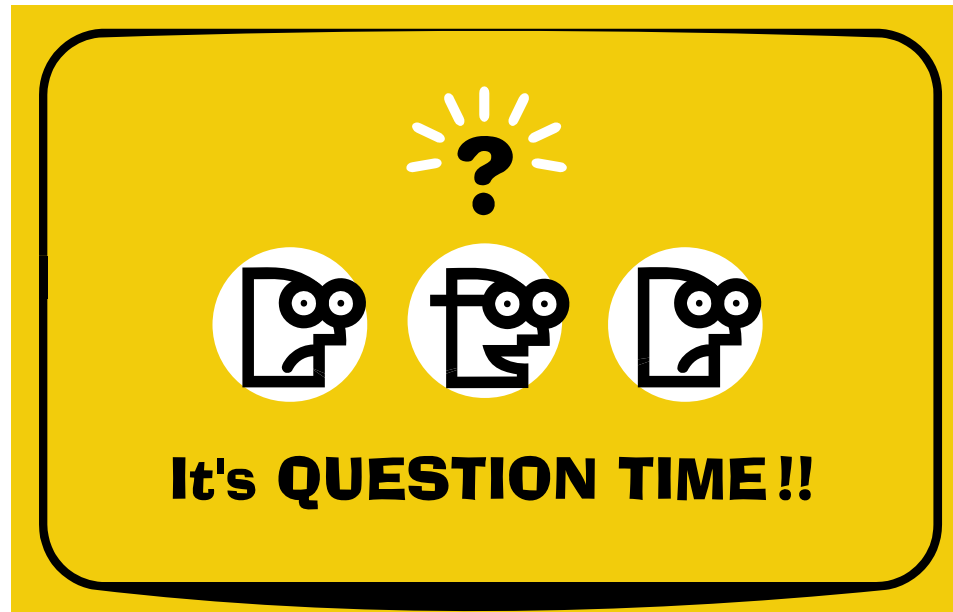
- Site assessment
- Public comment through January 18.
  - Written comments
  - Email comments
  - Local public comment meeting (3 communities)
  - Summary of public comments from all sources
- Decision
  - Assessment/comments/other considerations
  - Target of February 1
    - To avoid delaying design work

# ESSC Preliminary Timeline



Project documents and most materials used during the Session are posted on MINE.

<http://mine.mt.gov/it/pro/default.mcpx>



# ESSC Implementation Approach

- Helena facility
  - Several organizations have expressed interest
  - Move ITSD and “let it age”
  - Anticipate adding additional load mid-2010
    - **Let us know if you wish to discuss your needs & plans!**
  - Multiple services offered
    - ITSD Hosting – current offering
    - Agency Hardware Hosting – current offering
    - Custom Secured Area Hosting - considering



# ESSC Implementation Approach

- Eastern MT facility
  - Design objective to support peer site redundancy for critical systems' data and servers
  - Several organizations have expressed interest using it as a DR site.
    - No service established yet ... nature of backup, archiving approach, communications cost, etc
  - “Walk before we run”
    - A couple of steps before we are “bet your business” solid on data mirroring and failover technologies
    - **Let us know if you wish to discuss your needs & plans!**
  - ITSD will be considering what services to be offered
    - ITSD Hosting – current offering
    - Agency Hardware Hosting – current offering
    - Custom Secured Area Hosting - considering

# Risk Register

Risk ID	Risk Description	Prob.	Budget Impact	Schedule Impact	Risk Mitigation	Assigned/Status
D-1	Eastern site selection delayed causing delay in detail design; potential missing of a year's construction season	20%		Up to a year		
D-2	Helena site requires payment for land; not included in proposal in 2007		\$750,000		1. Shift to operating expense (spread over x years)	
					2. Find another site with reduced overall costs	
D-3	Construction costs exceed budget at preliminary design estimate	90%			Adjust square footage features to conform to budget	
R-1	Equipment cost for "swing equipment" exceeds budget. Swing equipment needed to minimize outages for relocating to new Helena facility.	50%			1. accept additional outages for move to Helena ESSC	
					2. Obtain additional funding.	
					3. Work with key vendors on loaner/reduced cost equipment.	

# General Discussion